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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,238	01/09/2004	Bruce Chai	59949	7734

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EXAMINER

TANINGCO, MARCUS H

ART UNIT	PAPER NUMBER
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2884

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/754,238

Applicant(s)

CHAI, BRUCE

Examiner

Marcus H. Taningco

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 29-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/20/04, 7/28/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-28, drawn to method of enhancing a crystal, classified in class 250, subclass 362.
- II. Claims 29-39, drawn to a scintillation detector, classified in class 250, subclass 361.00R.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the method may produce a scintillation detector, having the general formula of $\text{Ce:Lu}_2\text{SiO}_{5-z}$ wherein z is greater than zero. Furthermore, the scintillation detector, recited in claims 29-39, may be formed by diffusing oxygen during the growth process.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Christopher Regan on 3/13/06 a provisional election was made without traverse to prosecute the invention of a method of enhancing a crystal, claims 1-28. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 29-39 withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

Claims 11, 12, and 25 are objected to because of the following informalities: The symbol should be corrected to indicate the proper unit, degrees. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 19 the claims are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: any steps relating to the antecedent step of actually providing a non-enhanced LSO body.

Regarding claims 16-18, the claims recite that the diffusing results in increased performance, but it is unclear what, if any, additional steps are implied by the stated properties. For the purpose of this Office Action, no new steps are implied.

Regarding claims 2-4, the claims recite that the diffusing is carried out so as to effect certain properties in the LSO body, but it is unclear what, if any, additional steps are implied by the stated properties. For the purpose of this Office Action, no new steps are implied.

The balance of the claims are rejected based on their dependencies.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Manente et al. (US 5,660,627).

Re claims 1-4, 16-18, Manente et al. disclose a method of forming cerium doped LSO comprising the steps of diffusing oxygen into the body of monocrystalline LSO by heating the body for a period of time in an ambient containing oxygen (Col. 2, 26-48). Note: Re claims 2-4 and 16-18, Manente discloses the claimed invention according to claim 1, therefore the properties cited in said claims 2-4 and 16-18, would in fact be inherent as provided by said method taught by Manente.

Re claim 5, Manente et al. disclose a method comprising forming the LSO body with at least one dimension no greater than 20 mm (Col. 4, Table).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manente et al.

Re claims 6 and 7, Manente et al. disclose a rod-like LSO body (Fig. 2a). It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the shape of said LSO body into a rod or rectangle, since it has been held that matters relating to shape only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. Furthermore, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure.

Re claims 11 and 12, Manente et al. disclose heating said LSO body (Col. 2, 26-54), but fail to specify the temperature. However, those skilled in the art can appreciate that temperature is a result-effective variable when oxygenating a monocrystalline body. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify said temperature, since it has been held that discovering an optimum value of a result-effective variable involves only routine skill in the art.

Re claims 13 and 14, Manente et al. disclose heating said LSO body (Col. 2, 26-54), but fail to specify the period of time. However, those skilled in the art can appreciate that the period of time in which said LSO is heated, is a result-effective variable when oxygenating a monocrystalline body. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify said time period, since it has been held that discovering an optimum value of a result-effective variable involves only routine skill in the art.

Allowable Subject Matter

Claims 19-28 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 8-10 and 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With regards to 8-10, prior art fails to specify the specific requirements regarding the atmospheric pressure and oxygen concentration of the oxygen containing ambient.

With regards to claim 15, prior art fails to specify the LSO crystal consisting the cited formula prior to being enhanced.

With regards to claim 19, prior art fails to specify enhancing the LSO crystal wherein the body of the LSO crystal has oxygen vacancies therein.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lefaucher et al. (US 6,995,374) disclose single crystal scintillators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus H. Taningco whose telephone number is (571) 272-1848. The examiner can normally be reached on M - F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ALBERT J. GAGLIARDI
PRIMARY EXAMINER

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